

I claim:

1. In a method for transmission of data packets between at least one base station and at least one mobile station in a mobile radio system, the improvement which comprises:

transmitting each of the data packets in time frames having a fixed number of timeslots;

transmitting data packets from a mobile station in a plurality of successive timeslots;

transmitting at least one of control data packets and no data packets from a given base station to the mobile station during predetermined time frames while the mobile station is connected to the given base station; and

respectively making available to the mobile station a time interval longer than a predetermined time frame for at least one of receiving synchronization data packets and measuring signal levels of adjacent base stations.

2. The method for transmission of data packets according to claim 1, which comprises, during the time interval, switching the mobile station to reception of at least one of synchronization data packets and measurement of signal levels of adjacent base stations.

3. The method for transmission of data packets according to claim 1, which comprises transmitting the data packet from the given base station at least one of immediately before and immediately after a predetermined time frame is at least partially not received by the mobile station.

4. The method for transmission of data packets according to claim 3, which comprises reconstructing with the mobile station data packets at least partially not received using redundant coding of other received data packets.

5. The method for transmission of data packets according to claim 1, which comprises transmitting once again the data packet transmitted by the given base station at least one of immediately before and immediately after the predetermined time frame on at least one of the end and the start of the predetermined time frame.

6. The method for transmission of data packets according to claim 1, which comprises transmitting once again the data packet transmitted by the given base station at least one of immediately before and immediately after the predetermined time frame during the predetermined time frame, and receiving the data packet with the mobile station.

7. The method for transmission of data packets according to claim 1, which comprises choosing a length of the time interval during which the mobile station is switched to reception of synchronization data packets from adjacent base stations such that the mobile station can receive a first part of a synchronization data packet in a first time interval, and can receive a second part of a synchronization data packet in a second time interval.

8. The method for transmission of data packets according to claim 7, which comprises allowing a channel equalization to be determined by having the first part of the synchronization data packet and the second part of the synchronization data packet each contain at least one section of a training sequence of the synchronization data packet.

9. The method for transmission of data packets according to claim 1, which comprises:

transmitting data packets from a first mobile station and switching the first mobile station to receiving data packets at different times;

switching a second mobile station to reception of data packets in timeslots during which the first mobile station is transmitting data packets; and

transmitting data packets in timeslots during which the first mobile station is switched to reception of data packets.

10. A system for transmission of data packets in a mobile radio system, comprising:

at least one base station having a transmitting unit; and

at least one mobile station having a receiving unit,

said at least one base station and said at least one mobile station transmitting data packets in time frames having a fixed number of timeslots,

said at least one mobile station transmitting data packets in a plurality of successive timeslots, in which, while said at least one mobile station is connected to a given one of said at least one base station, said transmitting unit of said given base station transmits at least one of control data packets and no data packets to said at least one mobile station during a predetermined time frame,

a respective one of said receiving units of said at least one mobile station having an available time interval longer than the predetermined time frame for at least one of receiving

synchronization data packets and measuring signal levels of adjacent base stations.

11. The system for transmission of data packets according to claim 10, wherein said receiving unit of said at least one mobile station switches to at least one of reception of synchronization data packets and measurement of signal levels of adjacent base stations during the predetermined time interval.

12. The system for transmission of data packets according to claim 10, wherein said receiving unit of said at least one mobile station at least partially not receiving a data packet transmitted by said transmitting unit of said given base station at least one of immediately before and immediately after the predetermined time frame.

13. The system for transmission of data packets according to claim 12, wherein said at least one mobile station has a processing unit reconstructing data packets at least partially not received using redundant coding of other received data packets.

14. The system for transmission of data packets according to claim 10, wherein said transmitting unit of said given base station transmits once again a data packet transmitted at

least one of immediately before and immediately after the predetermined time frame on at least one of the end and the start of the predetermined time frame.

15. The system for transmission of data packets according to claim 10, wherein said transmitting unit of said given base station transmits once again the data packet transmitted at least one of immediately before and immediately after the predetermined time frame during the predetermined time frame, and said receiving unit of said at least one mobile station receives the data packet.

16. The system for transmission of data packets according to claim 10, wherein a length of the time interval during which said receiving unit of said at least one mobile station switches to reception of synchronization data packets from adjacent base stations is chosen such that said receiving unit of said at least one mobile station can receive a first part of a synchronization data packet in a first time interval, and can receive a second part of a synchronization data packet in a second time interval.

17. The system for transmission of data packets according to claim 16, wherein the first part and the second part of the synchronization data packet each contain at least one section

18. The system for transmission of data packets according to claim 10, wherein said at least one mobile station is two mobile stations including a first mobile station transmitting data packets and switched to receiving data packets at different times, and a second mobile station switched to receiving data packets in timeslots during which said first mobile station transmits data packets and transmits data packets in timeslots during which said first mobile station is switched to reception of data packets.